

REMARKS

Claims 1-33 are pending in the application.

Claims 1-33 have been rejected.

Claim Objections

The Office Action objects to Claims 4 and 6 as not adding any further limitation to the limitations of the claims from which these claims depend. *See* Office Action, p.2. Applicant respectfully disagrees and provides the following explanation for the content of those claims.

Independent Claim 1 provides for a system comprising a virtual device interface that:

- is configured to allow a primary storage unit to be accessed using at least one operation that is substantially the same as that used to control a secondary storage unit, and
- is coupled to control said primary storage unit and said secondary storage unit.

Claim 1. Applicant submits that the clear language of Claim 1 provides for access to a primary storage unit and coupling to control a primary storage unit and a secondary storage unit. However, the limitations of Claim 1 do not require a primary storage unit and a secondary storage unit to be part of the claimed system. Claims 4 and 6 provide limitations that include the primary storage unit or secondary storage unit in the system.

For at least these reasons, Applicant respectfully submits that Claims 4 and 6 do add further limitation to the claims from which they depend (Claims 1 and 3 and Claims 1, 3 and 4, respectively), and that the claims are not in need of correction.

Rejection of Claims Under 35 U.S.C. §112

Claims 1, 10, 16, 22 and 26 stand rejected under 35 U.S.C. §112 as purportedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully traverses this rejection.

The Office Action bases its §112 argument on the proposition that a computer system hard drive can be considered either removable or non-removable media, depending upon whether a hard drive is either internal or external to the computer system that accesses the hard drive. *See* Office Action, p. 3. Applicant respectfully submits that by making such a characterization, the Office Action ignores the disclosure of the present application in how the phrase “removable media” is used, and ignores common usage in the field of computer systems.

The Office Action clearly is looking at an entire device (e.g., the hard drive), rather than the media itself upon which data is stored. As claimed, the “storage unit” is distinguished from the “storage media” upon which the data is stored. *See* Claim 1 (e.g., “said primary storage unit is configured to provide access to data stored on non-removable storage media”). The Office Action ignores this claimed distinction.

Moreover, the Application provides that “primary storage typically employs storage technology that is suited for workloads requiring constant, high-volume access to data.” Application, ¶ [0005]. The Application further provides that secondary storage is “typically used for applications in which infrequent, serial access is required, such as backup for archival storage.” Application, ¶ [0005]. The Application also provides that secondary storage is equated to “removable media storage,” such as tape backup technology. *See* Application, ¶ [0006]. The Application further establishes that

removable media storage corresponds to storage technologies in which the media can be removed from the device writing the data to the media. *See, e.g.*, Application, ¶ [0008]; *see also* Application, ¶ [0010] (“equating secondary storage functionality to “tape drive/tape library functionality”). Finally, the Application establishes the distinction between non-removable storage media and removable storage media through the Application’s discussion of how the non-removable storage media is “accessed in a manner associated with removable storage media such as a physical tape library.” Application, ¶ [0026] (“[a] tape library emulation according to the present invention allows a user to insert a new tape into the tape library, remove a tape from the tape library, load a tape from the tape library into the tape library’s tape drive, unload a tape from the tape library’s tape drive, and perform other operations associated with a physical tape library.”). Thus, Applicant has focused on the ability (or inability) of the media, which stores the information, to be removed from the device reading or writing information from/to that media.

For at least these reasons, Applicant submits that use of the terms “non-removable storage media” and “removable storage media” in the claims has a clear and definite meaning as provided by the Application as filed, and as commonly used in the art. Applicant further respectfully submits that the interpretation given to the term “removable storage media” in the Office Action (Office Action, p.3) is in contradiction to the established meaning for that phrase in the application and in the art. For at least these reasons, Applicant submits that Claims 1, 10, 16, 22 and 26, and all claims depending therefrom, are in condition for allowance. Therefore, Applicant respectfully requests the Examiner’s reconsideration and withdrawal of the 35 U.S.C. §112, second paragraph rejection as to these claims and an indication of the allowability of same.

Rejection of Claims Under 35 U.S.C. §102

Claims 1-4 and 6 stand rejected under 35 U.S.C. §102(e) as purportedly being anticipated by U.S. Patent Publication No. 2004/0153739 naming Trimmer et al. as inventors (“Trimmer ’39”). Applicant respectfully traverses this rejection.

Independent Claim 1 contains limitations of the following form:

A virtual device interface, wherein

said virtual device interface is configured to allow a primary storage unit to be accessed using at least one operation that is substantially the same as that used to control a secondary storage unit,

said virtual device interface is coupled to control said primary storage unit and said secondary storage unit... .

See Claim 1. Applicant respectfully submits that the cited sections of Trimmer ’39 fail to provide disclosure of these claim limitations.

The Office Action equates Trimmer’s disclosed virtual tape library (VTL) with the claimed virtual device interface. See Office Action, p. 5. Trimmer ’39 provides disclosure that a VTL is purportedly a “logical representation” of a physical tape library (PTL). See Trimmer ’39, ¶¶ [0010] – [0012]. Thus, under Trimmer, Applicant submits that a corresponding mechanism to the claimed “secondary storage unit” would be a tape library or tape drive. See Trimmer ’39, ¶ [0010] (“The VTL emulates the exact behavior of a PTL.”). Applicant respectfully submits that there is no indication in Trimmer ’39 that the disclosed VTL is configured to control a tape device or tape library as provided in the claims (e.g., “said virtual device interface is coupled to control ... said secondary storage unit.”).

As purported disclosure of the “coupled to control... said secondary storage unit” claim limitation, the Office Action cites to Trimmer '39, ¶ [0015]. Applicant respectfully submits that this paragraph only discusses copying data between one VTL and another VTL, and there is no disclosure of a physical tape drive or PTL at all in this cited section. Further, there is no disclosure of a “remote off site physical tape library” as suggested in the Office Action. *See* Office Action, p.5. Applicant further notes that while Trimmer '39, ¶ [0014] mentions “playing back data written to the VTL” to a physical tape, there is no disclosure of the VTL controlling the tape drive, as provided in the claim.

In its interpretation of “secondary storage unit” using Trimmer '39, the Office Action appears to ignore the claim language that indicates that the claimed “virtual device interface” emulates the claimed “secondary storage unit” by suggesting that the corresponding structure to the secondary storage unit in Trimmer '39 is the illustrated disk element 56 in Fig. 2. *See* Office Action, p.5. Applicant respectfully submits that Trimmer '39's disk element 56 is merely another disk drive that is written to as a tape by the disclosed VTL. *See* Trimmer '39, ¶¶ [0030] – [0031]. This is clearly not the claimed “secondary storage unit” which corresponds to a physical device emulated by the claimed “virtual device interface.” *See, e.g.,* Application, ¶ [10]. This is further supported because the secondary storage unit is “configured to permit access to data stored on removable storage media,” which is clearly not provided by Trimmer '39's disk element 56.

For at least these reasons, and reasons expressed in responses to prior Office Actions, Applicant submits that Trimmer '39 fails to provide disclosure of each limitation of independent Claim 1, and all claims depending therefrom (Claims 2-9) and that those claims are in condition for allowance. Therefore, Applicant respectfully requests the

Examiner's reconsideration and withdrawal of the rejections as to those claims and an indication of the allowability of same.

Rejection of Claims Under 35 U.S.C. §103

Claims 10-12, 15-18, 21-24, 27-30 and 33 stand rejected under 35 U.S.C. §103(a) as purportedly being unpatentable over Trimmer '39 in view of U.S. Patent Application Publication No. 2004/0111251 naming Trimmer et al. as inventors ("Trimmer '51"). Applicant respectfully traverses this rejection.

In order for a claim to be rendered invalid under 35 U.S.C. §103, the subject matter of the claim as a whole would have to be obvious to a person of ordinary skill in the art at the time the invention was made. *See* 35 U.S.C. §103(a). This requires: (1) the reference(s) must teach or suggest all of the claim limitations; (2) there must be some teaching, suggestion or motivation to combine references either in the references themselves or in the knowledge of the art; and (3) there must be a reasonable expectation of success. *See* MPEP 2143; MPEP 2143.03; *In re Rouffet*, 149 F.3d 1350, 1355-56 (Fed. Cir. 1998).

Independent Claims 10, 16, 22 and 28 each contain limitations of substantially the following form:

Converting a first command to a second command using a virtual device interface, wherein

said first command is configured to control a first type of storage unit,
said second command is configured to control a second type of storage unit,
said first type of storage unit is a secondary storage unit,
said second type of storage unit is a primary storage unit,

said primary storage unit is configured to provide access to data stored on non-removable storage media, and

said secondary storage unit is configured to permit access to data stored on removable storage media; and

accessing said secondary storage unit using the virtual device interface.

See, e.g., Claim 10. Applicant respectfully submits that neither Trimmer '39 nor Trimmer '51, alone or in combination, provide disclosure of all of these limitations.

The Office Action suggests that independent Claims 16, 22 and 28 should be rejected for the same reasons expressed for independent Claim 1 and for dependent Claim 5. *See* Office Action, p. 8. As discussed above with respect to independent Claim 1, Trimmer '39 fails to provide disclosure of all of the limitations of independent Claim 1. The claim limitations discussed above correspond to both the “converting” and “accessing” limitations of Claims 10, 16, 22 and 28. For the reasons discussed above, Applicant respectfully submits that Trimmer '39 fails to provide disclosure of these limitations in Claims 10, 16, 22 and 28. Applicant further respectfully submits that the Office Action fails to provide any suggestion that Trimmer '51 remedies this deficiency. In fact, Trimmer'51 states that not all PTL commands need to be implemented, which is noted as an advantage. *See* Trimmer '51, ¶ [0032]. Thus, Trimmer '51 teaches away from implementing the full set of commands for the PTL, but the full set of commands would be necessary for actually running the PTL.

Therefore, Applicant respectfully submits that neither Trimmer '39 nor Trimmer '51, alone or in combination, provide disclosure of all of the limitations of Claims 10, 16, 22 and 28, as required.

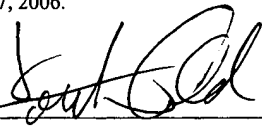
For at least these reasons, as well as the reasons expressed above, and in response to previous office actions with respect to cited references, Applicant respectfully submits

that the Office Action fails to present a *prima facie* case of obviousness of independent Claims 10, 16, 22 and 28 and all claims depending therefrom (Claims 11-15, 17-21, 23-27 and 29-33) and that they are in condition for allowance. Therefore, Applicant respectfully requests the Examiner's reconsideration and withdrawal of the rejections as to those claims and an indication as to the allowability of same.

CONCLUSION

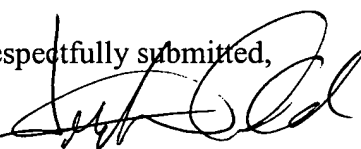
In view of the amendments and remarks set forth herein, the application and the claims therein are believed to be in condition for allowance without any further examination and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5090.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, COMMISSIONER FOR PATENTS, P. O. Box 1450, Alexandria, VA 22313-1450, on October 17, 2006.


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10/17/2006
Date of Signature

Respectfully submitted,


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